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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/870,480	06/01/2001	Kouki Fukui	2001_0681A	1037

513 7590 07/18/2003

WENDEROTH, LIND & PONACK, L.L.P.
2033 K STREET N. W.
SUITE 800
WASHINGTON, DC 20006-1021

EXAMINER
AUGHENBAUGH, WALTER

ART UNIT	PAPER NUMBER
1772	10

DATE MAILED: 07/18/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

A9-10

Office Action Summary	Application No.	Applicant(s)	
	09/870,480	FUKUI, KOUKI	
	Examiner	Art Unit	
	Walter B Aughenbaugh	1772	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *27 May 2003* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *15-42* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *15-42* is/are rejected.

7)☒ Claim(s) *30* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on May 27, 2003 has been entered.

Acknowledgement of Applicant's Amendments

2. The amendments made in claims 15, 22, 28, 30, 31, 37 and 41 given on pages 1-3 of Paper 9 and the "Version with markings to show changes made" attachment to Paper 9 have been received and considered by Examiner.

3. New claim 42 presented on page 3 of Paper 9 has been received and considered by Examiner.

WITHDRAWN REJECTIONS

4. The 35 U.S.C. 112 rejection of claims 28, 30, 37 and 41 made record in paragraph 9 of Paper 7 has been withdrawn due to Applicant's amendments in Paper 9.

5. The 35 U.S.C. 103(a) rejection of claims 15, 18, 20-23, 25-27, 31, 32 and 34-36 over Parrott et al. in view of Clarke made of record in paragraph 10 of Paper 7 has been withdrawn due to Applicant's amendments to independent claims 15, 22 and 31 in Paper 9 and has been replaced with the 35 U.S.C. 103(a) rejection of claims 15, 18-27 and 31-36 over Parrott et al. in view of Berdan, II and in further view of Clarke made of record in this Office Action (Paper 10).

6. The 35 U.S.C. 103(a) rejection of claims 16, 17 and 40 over Parrott et al. in view of Clarke and in further view of Yamaguchi et al. made of record in paragraph 11 of Paper 7 has been withdrawn due to Applicant's amendments to independent claims 15, 22 and 31 in Paper 9.

7. The 35 U.S.C. 103(a) rejection of claims 28, 29, 30, 37, 38 and 41 over Parrott et al. in view of Clarke and in further view of Hinden et al. made of record in paragraph 13 of Paper 7 has been withdrawn due to Applicant's amendments to independent claims 15, 22 and 31 in Paper 9.

8. The 35 U.S.C. 103(a) rejection of claim 39 over Parrott et al. in view of Clarke and in further view of Hinden et al. and in further view of Yamaguchi et al. made of record in paragraph 14 of Paper 7 has been withdrawn due to Applicant's amendments to independent claims 15, 22 and 31 in Paper 9.

REPEATED REJECTIONS

9. The 35 U.S.C. 103(a) rejection of claims 19, 24 and 33 over Parrott et al. in view of Clarke and in further view of Berdan, II made of record in paragraph 12 of Paper 7 has been incorporated into the 35 U.S.C. 103(a) rejection of claims 15, 18-27 and 31-36 over Parrott et al. in view of Berdan, II and in further view of Clarke made of record in this Office Action (Paper 10) due to Applicant's amendments to independent claims 15, 22 and 31 in Paper 9.

NEW OBJECTIONS

Claim Objections

10. Claim 30 is objected to because of the following informalities: the phrase "noncombustible joint member are disposed" (third line of claim 30) should be "noncombustible joint member is disposed". Appropriate correction is required.

NEW REJECTIONS

Claim Rejections - 35 USC § 103

11. Claims 15, 18-27 and 31-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Parrott et al. in view of Berdan, II and in further view of Clarke.

In regard to independent claim 15, Parrott et al. teach a noncombustible insulating duct (page 1, first paragraph) comprising panels (item 5, Figure 1) of sheet material secured together by a bonding agent (paragraph bridging pages 4 and 5). The panels of sheet material comprise resin-bonded mineral wool strips (item 7) adhesively bonded to and encased by inner and outer galvanized noncombustible steel sheets (item 9) (page 6, first four lines of last paragraph, and Figures 1-4). The mineral wool sheet material is a fire-resisting material (i.e. an insulating material) (first three lines and last seven lines of page 2).

Parrott et al. fail to teach that the noncombustible sheet is disposed continuously about a circumference of the insulating material so as to completely encase the insulating material when viewed in longitudinal cross section and that the sheet material is in the form of an elongated strip that is arranged in a spiral shape having a plurality of turns wherein adjacent turns of the plurality of turns are secured together so as to form a tubular duct.

In regard to the recitation regarding the noncombustible sheet being disposed continuously about a circumference of the insulating material, Parrot et al. teach that two noncombustible sheets (item 9) are bent twice each at perpendicular angles to encase a mineral wool core (item 17, Fig. 5) (last five lines of page 8 and Fig. 5). Furthermore, Berdan, II discloses a building insulation assembly comprising a mineral fiber wool insulating material that is mechanically shaped into a batt having a rectangular cross sectional shape and an exterior

facing (external layer, item 12, Fig. 1) that is secured to the batt (item 10, Fig. 1) and that overlies the entire batt perimeter to facilitate the ease of installing and handling of the insulation assembly (col. 1, lines 13-27, col. 3, lines 59-65, col. 5, line 57 and col. 6, line 13). Therefore, one of ordinary skill in the art would have recognized to have bent the noncombustible sheet of Parrot et al. at perpendicular angles as taught by Parrot et al. such that the noncombustible sheet of Parrot et al. is disposed continuously about a circumference of the insulating material of Parrot et al. so as to completely encase the insulating material when viewed in longitudinal cross section in order to facilitate the ease of installing and handling of the insulation assembly as taught by Berdan, II.

In regard to the recitation regarding the sheet material being in the form of an elongated strip that is arranged in a spiral shape where the turns are secured to together by a bonding agent, Clarke discloses a tubular ventilation duct (col. 1, lines 30-33) formed of spirally wound tape (the equivalent of an elongated strip "arranged in a spiral shape having a plurality of turns" as claimed) (col. 1, lines 23-29 and Figures 2 and 3). Clarke discloses that a bonding agent adhesively secures side portions of adjacent turns together (col. 1, lines 54-58). One of ordinary skill in the art would have recognized to have formed the sheet material taught by Parrott et al. and Berdan, II into an elongated strip of sufficient length so as to spirally wind the elongated strip into a tubular duct having a plurality of turns wherein adjacent turns of the plurality of turns are secured together by a bonding agent as Clarke teaches that it is well known to form a tubular ventilation duct formed of a spirally wound elongated strip of ventilation sheet material.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have bent the noncombustible sheet of Parrot et al. at perpendicular angles as taught

by Parrot et al. such that the noncombustible sheet of Parrot et al. is disposed continuously about a circumference of the insulating material of Parrot et al. so as to completely encase the insulating material when viewed in longitudinal cross section in order to facilitate the ease of installing and handling of the insulation assembly as taught by Berdan, II, and to have formed the sheet material taught by Parrott et al. and Berdan, II into an elongated strip of sufficient length so as to spirally wind the elongated strip into a tubular duct having a plurality of turns wherein adjacent turns of the plurality of turns are secured together by a bonding agent as Clarke teaches that it is well known to form a tubular ventilation duct formed of a spirally wound elongated strip of ventilation sheet material.

In regard to independent claims 22 and 31, Parrott et al. teach the noncombustible insulating duct as discussed above. Parrott et al. also teach that in addition to being secured together by a bonding agent, or as an alternative to being secured together by a bonding agent (paragraph bridging pages 4 and 5), panels (item 5) of the sheet material are connected via jointing strip (item 17, the noncombustible joint member as claimed by Applicant) which comprises a mineral wool core (paragraph on page 8-9 and Figure 5); the mineral wool core of jointing strip (item 17) is adhesively bonded to the steel cladding (item 9 of Figure 5, the flange as claimed by Applicant in claims 27 and 36) as mineral wool sheet (item 7) is adhesively bonded to inner and outer galvanized steel sheets (item 9 of Figures 1-4) as taught in the first four lines of the last paragraph of page 6.

Parrott et al. fail to teach that the noncombustible sheet is disposed continuously about a circumference of the insulating material so as to completely encase the insulating material when viewed in longitudinal cross section and that the sheet material is in the form of an elongated

strip that is arranged in a spiral shape having a plurality of turns wherein adjacent turns of the plurality of turns are secured together so as to form a tubular duct.

In regard to the recitation regarding the noncombustible sheet being disposed continuously about a circumference of the insulating material, Parrot et al. teach that two noncombustible sheets (item 9) are bent twice each at perpendicular angles to encase a mineral wool core (item 17, Fig. 5) (last five lines of page 8 and Fig. 5). Furthermore, Berdan, II discloses a building insulation assembly comprising a mineral fiber wool insulating material that is mechanically shaped into a batt having a rectangular cross sectional shape and an exterior facing (external layer, item 12, Fig. 1) that is secured to the batt (item 10, Fig. 1) and that overlies the entire batt perimeter to facilitate the ease of installing and handling of the insulation assembly (col. 1, lines 13-27, col. 3, lines 59-65, col. 5, line 57 and col. 6, line 13). Therefore, one of ordinary skill in the art would have recognized to have bent the noncombustible sheet of Parrot et al. at perpendicular angles as taught by Parrot et al. such that the noncombustible sheet of Parrot et al. is disposed continuously about a circumference of the insulating material of Parrot et al. so as to completely encase the insulating material when viewed in longitudinal cross section in order to facilitate the ease of installing and handling of the insulation assembly as taught by Berdan, II.

In regard to the recitation regarding the sheet material being in the form of an elongated strip that is arranged in a spiral shape where the turns are secured to together by a noncombustible joint member (as claimed claim 22) or are secured to together by both a bonding agent and a noncombustible joint member (as claimed claim 31), Clarke discloses the tubular ventilation duct (col. 1, lines 30-33) formed of spirally wound tape (the equivalent of an

elongated strip "arranged in a spiral shape having a plurality of turns" as claimed) as discussed above (col. 1, lines 23-29 and Figures 2 and 3). One of ordinary skill in the art would have recognized to have formed the sheet material taught by Parrott et al. and Berdan, II into an elongated strip of sufficient length so as to spirally wind the elongated strip into a tubular duct having a plurality of turns wherein each pair of adjacent turns of the plurality of turns are secured together by the noncombustible joint member of Parrott et al. in addition to (in the case of claim 31), or as an alternative to (in the case of claim 22), the bonding agent of Parrott et al. (discussed in the paragraph bridging pages 4 and 5), as Clarke teaches that it is well known to form a tubular ventilation duct formed of a spirally wound elongated strip of ventilation sheet material. taught by Parrott et al. and Berdan, II

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have bent the noncombustible sheet of Parrot et al. at perpendicular angles as taught by Parrot et al. such that the noncombustible sheet of Parrot et al. is disposed continuously about a circumference of the insulating material of Parrot et al. so as to completely encase the insulating material when viewed in longitudinal cross section in order to facilitate the ease of installing and handling of the insulation assembly as taught by Berdan, II, and to have formed the sheet material taught by Parrott et al. and Berdan, II into an elongated strip of sufficient length so as to spirally wind the elongated strip into a tubular duct having a plurality of turns wherein each pair of adjacent turns of the plurality of turns are secured together by the noncombustible joint member of Parrott et al. in addition to (in the case of claim 31), or as an alternative to (in the case of claim 22), the bonding agent of Parrott et al. (discussed in the paragraph bridging pages 4 and

5), as Clarke teaches that it is well known to form a tubular ventilation duct formed of a spirally wound elongated strip of ventilation sheet material.

In regard to claims 18, 20, 23, 25, 32, and 34, Parrott et al. teaches that mineral wool material (which is composed of mineral fibers) such as rock wool (first full paragraph of page 3) is the noncombustible insulating material (first three lines and last seven lines of page 2); therefore, the noncombustible insulating material comprises noncombustible insulating fibers.

In regard to claims 19, 24 and 33, Parrott et al., Berdan, II and Clarke teach the noncombustible insulating duct as discussed above. Parrott et al. and Clarke fail to teach that the noncombustible insulating fiber is glass wool. Berdan, II, however, discloses that mineral fibers such as fibrous glass wool is a well known insulating fiber material (col. 1, lines 13-21). Therefore, one of ordinary skill in the art would have recognized to have used glass wool as the noncombustible insulating fiber of the duct of Parrott et al., Berdan, II and Clarke since Berdan, II discloses that glass wool is a well known insulating fiber material.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used glass wool as the noncombustible insulating fiber of the duct of Parrott et al., Berdan, II and Clarke since Berdan, II teaches that glass wool is a well known insulating fiber material.

In regard to claims 21, 26 and 35, the elongated strip (i.e. tape) of Clarke has a substantially rectangular cross section (see the cross section of the elongated strip with item 16 attached to the cross section of the elongated strip in the lower left-hand corner of Figure 2 and also see the cross sections of the three turns of the elongated strip shown at the top of the portion of the tubular duct shown in Figure 3).

In regard to claims 27 and 36, Parrott et al., Berdan, II and Clarke teach the tubular noncombustible insulating duct as discussed above in the rejection of claims 22 and 31. The elongated strip taught by Parrott et al., Berdan, II and Clarke has first and second opposite sides facing in opposing axial directions of the tubular duct, respectively, and inner and outer sides facing toward an interior of the tubular duct and an exterior of the tubular duct, respectively (see Figure 2 of Clarke). The elongated strip taught by Parrott et al., Berdan, II and Clarke has flanges (steel cladding, see item 9 of Figure 5 of Parrott et al. and paragraph on pages 8-9 of Parrott et al.) projecting from the first and second sides thereof, respectively. In regard to the limitation that the "noncombustible joint member is secured to said flanges of adjacent turns of said elongated strip to connect said flanges together, thereby connecting said turns together", the jointing strip (item 17, the noncombustible joint member as claimed by Applicant) is adhesively bonded to the steel cladding (item 9 of Figure 5, the flanges as claimed by Applicant in claims 27 and 36), and is therefore "secured to said flanges of adjacent turns of said elongated strip to connect said flanges together, thereby connecting said turns together".

12. Claims 16, 17 and 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Parrott et al. in view of Berdan, II and in further view of Clarke, and in further view of Yamaguchi et al.

Parrott et al., Berdan, II and Clarke teach the noncombustible insulating duct as discussed above. Parrott et al. teaches that the mineral wool material (which is composed of mineral fibers) such as rock wool (first full paragraph of page 3) is the noncombustible insulating material (first three lines and last seven lines of page 2); therefore, the noncombustible insulating material comprises noncombustible insulating fibers.

Parrott et al., Berdan, II and Clarke fail to explicitly teach that the bonding agent comprises a noncombustible bonding agent.

Yamaguchi et al., however, discloses a noncombustible bonding agent for noncombustible inorganic fibers (col. 1, lines 5-12), such as rock wool and glass fiber (col. 1, lines 18-21), and noncombustible sheet materials obtained from the noncombustible inorganic fibers and noncombustible bonding agent (col. 1, lines 16-17 and col. 1, lines 32-42). One of ordinary skill in the art would have recognized to have used the noncombustible bonding agent as the bonding agent of Parrott et al., Berdan, II and Clarke in order to secure together adjacent turns of the plurality of turns comprising the noncombustible insulating fiber material since Yamaguchi et al. establish that it is well known to use a noncombustible bonding agent to bond noncombustible fibrous materials.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used the noncombustible bonding agent as the bonding agent of Parrott et al., Berdan, II and Clarke in order to secure together adjacent turns of the plurality of turns comprising the noncombustible insulating fiber material since Yamaguchi et al. establish that it is well known to use a noncombustible bonding agent to bond noncombustible fibrous materials.

13. Claims 28, 29, 30, 37, 38, 41 and 42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Parrott et al. in view of Berdan, II and in further view of Clarke, and in further view of Hinden et al.

In regard to claims 28 and 37, Parrott et al., Berdan, II and Clarke teach the noncombustible insulating duct having flanges (steel cladding, item 9 of Figure 5) which include axially-extending portions extending in axial directions of the tubular duct as discussed above.

Parrott et al., Berdan, II and Clarke fail to teach that the noncombustible joint member has opposing side edges that are folded-over the axially extending portions, respectively, of the flanges of the adjacent turns of the elongated strip.

Hinden et al., however, disclose a flexible connector material used in air ducting (col. 1, lines 6-12) having air-impervious sheets (items 17 and 18, Figure 5) encasing insulating material such as glass wool material (item 22, Figures 3-5, the insulating material is not labeled in Figure 5) (col. 2, line 49 – col. 3, line 8). The flexible connector material of Hinden et al. has marginal edges (items 19, the opposing side edges as claimed) that are clamped within recesses (items 21) formed by the bent marginal edges (items 16 labeled in Figures 3 and 4) of the strips (items 13 and 14, the flanges as claimed) (col. 3, lines 1-5 and Figures 3-5). The combination of the flexible connector material and the bent marginal edges (item 16, Fig. 3 and 4) corresponds to the noncombustible joint member as claimed in the instant application. The bent marginal edges of Hinden et al. are opposing side edges of the noncombustible joint member as claimed in the instant application that are folded over the strips of Hinden et al. (items 13 and 14), which correspond to the axially extending portions of the flanges as claimed in the instant application.

Therefore, one of ordinary skill in the art would have recognized to have formed the flanges of the duct of Parrott et al., Berdan, II and Clarke in the shape of the bent marginal edges (items 16) of the flanges of Hinden et al. to form a noncombustible joint member having opposing side edges that are folded over the axially extending portions, respectively, of the flanges of Parrott et al., Berdan, II and Clarke in order to provide effective insulating properties at the junction of joint members used in ducting over protracted periods of time (col. 1, line 67-col. 2, line 4) as taught by Hinden et al.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have formed the flanges of the duct of Parrott et al., Berdan, II and Clarke in the shape of the bent marginal edges (items 16) of the flanges of Hinden et al. to form a noncombustible joint member having opposing side edges that are folded over the axially extending portions, respectively, of the flanges of Parrott et al., Berdan, II and Clarke in order to provide effective insulating properties at the junction of joint members used in ducting over protracted periods of time (col. 1, line 67- col. 2, line 4) as taught by Hinden et al.

In regard to claims 29 and 38, the elongated strip (i.e. tape) of Clarke has a substantially rectangular cross section (see the cross section of the elongated strip with item 16 attached to the cross section of the elongated strip in the lower left-hand corner of Figure 2 and also see the cross sections of the three turns of the elongated strip shown at the top of the portion of the tubular duct shown in Figure 3).

In regard to claims 30, 41 and 42, Parrott et al., Berdan, II and Clarke and Hinden et al. teach the duct as discussed above. Parrott et al. teach that a portion of each of the flanges (item 9, Figure 5) (one flange from a first side of the panel and one flange from a second side of the panel) projects into interior of the duct, that the noncombustible joint member (item 17) is engaged with the flanges and that the noncombustible joint member is disposed in the interior of the duct (see Figure 5).

Parrott et al., Berdan, II, Clarke and Hinden et al. fail to teach that the entire flange projects toward the interior of the tubular duct or that the joint member is disposed in the interior of the tubular duct.

However, since Hinden et al. disclose that the joint member, which is provided on the exterior of the duct, is for providing effective insulating properties over protracted periods of time (col. 1, line 67- col. 2, line 4), one of ordinary skill in the art would have recognized that the joint member of Hinden et al. would perform the equivalent function of providing effective insulating properties over protracted periods of time whether the joint member was provided on the exterior of the duct or in the interior of the duct. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have formed the duct taught by Parrott et al., Berdan, II, Clarke and Hinden et al. such that the flanges project intothe interior of the tubular duct and therefore such that the noncombustible joint member is disposed in the interior of the tubular duct, since the joint member of Hinden et al. would perform the equivalent function of providing effective insulating properties over protracted periods of time whether the joint member was provided on the exterior of the duct or in the interior of the duct.

14. Claim 39 is rejected under 35 U.S.C. 103(a) as being unpatentable over Parrott et al. in view of Berdan, II, in view of Clarke, in further view of Hinden et al., and in further view of Yamaguchi et al.

Parrott et al., Berdan, II, Clarke and Hinden et al. teach the duct as discussed above.

Parrott et al., Berdan, II, Clarke and Hinden et al. fail to explicitly teach that the bonding agent comprises a noncombustible bonding agent.

Yamaguchi et al., however, discloses a noncombustible bonding agent for noncombustible inorganic fibers (col. 1, lines 5-12), such as rock wool and glass fiber (col. 1, lines 18-21), and noncombustible sheet materials obtained from the noncombustible inorganic fibers and noncombustible bonding agent (col. 1, lines 16-17 and col. 1, lines 32-42). One of

ordinary skill in the art would have recognized to have used the noncombustible bonding agent as the bonding agent of Parrott et al., Berdan, II, Clarke and Hinden et al. in order to secure together adjacent turns of the plurality of turns comprising the noncombustible insulating fiber material since Yamaguchi et al. establish that it is well known to use a noncombustible bonding agent to bond noncombustible fibrous materials.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used the noncombustible bonding agent as the bonding agent of Parrott et al., Berdan, II, Clarke and Hinden et al. in order to secure together adjacent turns of the plurality of turns comprising the noncombustible insulating fiber material since Yamaguchi et al. establish that it is well known to use a noncombustible bonding agent to bond noncombustible fibrous materials.

ANSWERS TO APPLICANTS ARGUMENTS

15. Applicant's arguments on pages 4-5 of Paper 9 that the prior art rejections made of record in Paper 7 are inapplicable the claims as amended in Paper 9 are rendered moot due the new rejections made under 35 U.S.C. 103(a) made of record in this Office Action (Paper 10).

16. In response to Applicant's argument that the "structure of Parrott is incompatible with the concept of a spiral winding of an elongated strip formed of an insulating material and a noncombustible sheet so as to form a noncombustible insulating duct" (page 5 of Paper 9), Applicant's only support for this statement is that the "Parrott structure requires that a separate corner section 11 be provided". Parrott nonetheless does teach the sheet material formed of an insulating material and noncombustible sheeting. One of ordinary skill in the art would have recognized to have spirally wound the sheet material taught by Parrott and Berdan, II as

established in the 35 U.S.C. 103(a) rejection to claims 15, 22 and 31 over Parrott in view of Berdan, II, and in further view of Clarke made of record in this Office Action (Paper 10).

17. In response to Applicant's arguments that the "Clarke, Yamaguchi et al., Berdan, II and Hinden et al. references provide no teaching or suggestion that would have obviated the above-discussed shortcomings of the Parrott reference" (bottom page 5 of Paper 9), it is Examiner's position that the Berdan, II reference does indeed obviate the shortcomings of the Parrott reference that Applicant points out in Paper 9, as evidenced by the 35 U.S.C. 103(a) rejection of claims 15, 18, 19-27, 31-33 and 34-36 as being unpatentable over Parrott et al. in view of Berdan, II and in further view of Clarke made of record in this Office Action (Paper 10).

18. In response to Applicant's arguments that "a person having ordinary skill in the art would clearly not have been motivated to modify the Parrott reference in such a manner as to result in or otherwise render obvious the present invention of claims 15, 22 and 31" (sentence bridging pages 5 and 6 of Paper 9), it is Examiner's position that one of ordinary skill in the art would have been motivated to form the sheet material of Parrott into the structures taught by Berdan, II and Clarke as disclosed in the 35 U.S.C. 103(a) rejection of claims 15, 18, 19-27, 31-33 and 34-36 as being unpatentable over Parrott et al. in view of Berdan, II and in further view of Clarke made of record in this Office Action (Paper 10).

19. The limitations of the dependent claims Applicant referes to in the first full paragraph of page 6 of Paper 9 have been addressed in the appropriate art rejections provided in this Office Action.

Conclusion

20. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US 4,204,562 to Kelly, US 6,076,561 to Akedo et al., US 6,158,477 to Waters, US 6,179,009 to Fukui and US 6,250,339 to Ikegami et al.

21. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Walter B. Aughenbaugh whose telephone number is 703-305-4511. The examiner can normally be reached on Monday-Thursday from 9:00am to 6:00pm and on alternate Fridays from 9:00am to 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Harold Pyon, can be reached on 703-308-4251. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9310.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

wba
07/11/03 WBA

William P. Watkins III

WILLIAM P. WATKINS III
PRIMARY EXAMINER